



Dart Hawkesbury  
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada  
Tel (613) 632-5200

## Purchasing Receipts

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
PO040159	ACI001-VC	1	1	Net 30	MT-A500-TR-1.500X1.000W0.125	Steel Rectangular Tubing 1.500""H X 1.000""W X 0.125""T : MATERIAL: ASTM A500 STEEL SQUARE TUBING SPECIFICATION: ASTM A500 OR ASTM A513				24	6/25/2018	24		S082796	Stock	6/20/2018	\$ 1.73 / ft	0		\$41.42	Acier Ouellette Inc.
		2			MT-4140-S-3.000X8.000	AISI 4140 / 4142 Steel Plate 3.000""T X 8.000""W SPECIFICATION: AISI 4140 / 4142 STEEL SHEET OR PLATE ASTM A829, AMS 6395 MINIMUM ROCKWELL C = 28 Rc MAXIMUM ROCKWELL C = 32 Rc						24		S082797	Stock	6/20/2018	\$ 204.20 / ft	0		\$4,900.80	Acier Ouellette Inc.
		3			MT-4140-R2.000	AISI 4140 Round Bar : MAT""L, AISI 4140 ROUND BAR MINIMUM ROCKWELL C = 20 Rc MAXIMUM ROCKWELL C = 38 Rc SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529				12		12		S082798	Stock	6/20/2018	\$ 22.64 / ft	0		\$271.64	Acier Ouellette Inc.
		4			MT-HRS-B-2.500X3.500	Hot Rolled Steel Bar 2.500W X 3.500H MATERIAL: HOT ROLLED STEEL PLATE ASTM A36 OR ASTM A1011 OR 44W OR ASTM A1018				3		3		S082799	Stock	6/20/2018	\$ 39.80 / ft	0		\$119.40	Acier Ouellette Inc.
		5			M6061T6R7.000	6061-T6 Round Bar 7.000"" (CUT TO SIZE: 7.125"" ) : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ-AA-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft				6		6		S082800	Stock	6/20/2018	\$ 212.45 / ft	0		\$1,261.97	Acier Ouellette Inc.
		6			M304S20GA	304/316 .040 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 receive sf				128		128		S082801	Stock	6/20/2018	\$ 5.27 / sf	0		\$674.93	Acier Ouellette Inc.

PO No	Supplier	Line Item No	Rel No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	Total	Supplier Name
		7			M5052H32S.063	5052-H32 .063 Sheet : MATERIAL: 5052-H32 ALUMINUM SHEET AS PER QQ-A-250/8 OR AMS-QQ-A-250/8 OR AMS 4016 OR ASTM B209 receive sf				64		64		S082802	Stock	6/20/2018	\$ 5.91 / sf	0		\$378.25	Acier Ouellette Inc.
		8			M304R0.375	304 Round Bar 0.375 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft				12		12		S082803	Stock	6/20/2018	\$ 1.19 / ft	0		\$14.30	Acier Ouellette Inc.
		9			M303R0.500	303 Round Bar 0.500" MATERIAL: AISI 303 SS ROUND BAR AS PER ASTM A582 NOTE:304/316 NOT ACCEPTABLE receive ft				72		72		S082804	Stock	6/20/2018	\$ 2.34 / ft	0		\$168.54	Acier Ouellette Inc.
		10			M303R0.750	303 Round Bar 0.750 : MATERIAL: AISI 303 SS ROUND BAR AS PER ASTM A582 NOTE:304/316 NOT ACCEPTABLE receive ft						72		S082805	Stock	6/20/2018	\$ 5.14 / ft	0		\$369.80	Acier Ouellette Inc.
<b>Total:</b>										<b>417</b>		<b>417</b>								<b>\$6,166.39</b>	



Items										
Line Item	Part	Supplier Part No	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
4	MT-HRS-B-2.500X3.500 <i>AT</i>		Hot Rolled Steel Bar 2.500W X 3.500H MATERIAL: HOT ROLLED STEEL PLATE ASTM A36 OR ASTM A1011 OR 44W OR ASTM A1018	Firmed	6/21/18	3 ft	0 ft <i>3 ft</i>	3 ft	\$39.80/ft	\$119.40
5	M6061T6R7.000 <i>AT</i>		6061-T6 Round Bar 7.000" (CUT TO SIZE: 7.125") : MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR AS PER QQ-A-225/8 OR AMS-QQ-A-225/8 OR AMS 4117 4128/4115/4116 OR QQ-AA-200/8 OR AMS-QQ-A-200/8 OR AMS 4160 OR ASTM B221 OR ASTM B221 receive ft	Firmed	6/21/18	5.938 ft <i>✓</i>	0 ft <i>5.938 ft</i>	6 ft	\$212.45305/ft	\$1,261.55
Line Item Note 10 pcs cut at 7.125" = 5.9375 ft										
6	M304S20GA <i>AT</i>		304/316 .040 Sheet : MATERIAL: AISI 304/316 SS SHEET ANNEALED AS PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316) OR ASTM A240 OR ASME SA240 receive sf	Firmed	6/14/18	128 sf <i>✓</i>	0 sf <i>128 sf</i>	128 sf	\$5.2728906/sf	\$674.93
7	M5052H32S.063 <i>AT</i>		5052-H32 .063 Sheet : MATERIAL: 5052-H32 ALUMINUM SHEET AS PER QQ-A-250/8 OR AMS-QQ-A-250/8 OR AMS 4016 OR ASTM B209 receive sf	Firmed	6/15/18	64 sf <i>✓</i>	0 sf <i>64 sf</i>	64 sf	\$5.9101562/sf	\$378.25
8	M304R0.375		304 Round Bar 0.375 : MATERIAL: AISI 304/316 SS ROUND BAR AS PER ASTM A276 NOTE: AISI 303 NOT ACCEPTABLE receive ft	Firmed	6/14/18	12 ft <i>✓</i>	0 ft <i>12 ft</i>	12 ft	\$1.191666/ft	\$14.30
9	M303R0.500		303 Round Bar 0.500" : MATERIAL: AISI 303 SS ROUND BAR AS PER ASTM A582 NOTE: 304/316 NOT ACCEPTABLE receive ft	Firmed	6/14/18	72 ft <i>✓</i>	0 ft <i>72 ft</i>	72 ft	\$2.3408333/ft	\$168.54
10	M303R0.750		303 Round Bar 0.750 : MATERIAL: AISI 303 SS ROUND BAR AS PER ASTM A582 NOTE: 304/316 NOT ACCEPTABLE receive ft	Firmed	6/21/18	72 ft <i>✓</i>	0 ft <i>72 ft</i>	72 ft	\$5.136111/ft	\$369.80
Grand Total:									\$8,200.63	

## Order Notes

*ccid M180600**C. J. J.*

Plex 6/11/18 11:53 AM dent.lavoie.chantia

Order Notes
<b>Procurement Quality Clauses</b> A005 right of entry A012 chemical and physical test report A016 personnel qualification A017 raw material identification (as applicable) A026 certification of material conformance A041 quality management system A042 dart notification by supplier A043 retention of quality documents  A048 counterfeit parts avoidance, detection, mitigation and disposition program  A049 supplier awareness  Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit <a href="http://www.dartaerospace.com">www.dartaerospace.com</a> for further explanation.

Plex 6/11/18 11:53 AM dart.lavote.chantal



## DELIVERY - CLIENT

Copy CO00094527

### ACIER OUELLETTE INC.

935, Boul. du Havre  
Salaberry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5696 Mtl: 514-336-4246 Ext.: 866-456-4242

Customer N° CLI0001056  
Date 2018/06/11  
Delivery date **2018/06/20**  
Your order N° 40159  
Processed by Eric Kaehlert  
Salesman  
Carrier OUELLETTE VALLEYFIELD  
Credit Terme Net 30 Days  
Page 1

#### Billed to

DART AEROSPACE LTD  
1270 , ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

#### Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Instruction F-M

Delivery Route 5

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
<b>1</b> TUBE HSS 1 1/2 X 1 X 0.125 * T-1121125 <b>5925</b>  1 X 24'  LINE#1 Heat : 745320 AK	42.72	24.00	PI_\$CLB		24'						
<b>2</b> ROUND 4140 HEAT TREAT 2 (R) R4140-2H <b>4937</b>  1 X 12'  LINE#3 Heat : 75069217 AK	128.16	12.00	PI_\$CLB		12'						

NIR : R-109516-6

Next Page...



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935, Boul. du Havre  
Salaberry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
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**Your order N°** 40159  
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**Salesman**  
**Carrier** OUELLETTE VALLEYFIELD  
**Credit Terme** Net 30 Days  
**Page** 2

#### Billed to

DART AEROSPACE LTD  
1270, ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

#### Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

**Instruction** F-M

**Delivery Route** 5

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
<b>3</b> PLATE 44W 2 1/2 RANDOM ✓ P44-212-V <b>4088</b>  COUPE AU FEU FEU <b>3</b>  1 PC 3-1/2" X 36"  LINE#4  ** TRANSIT ST-JEROME 18-06 ** Heat : 7B6102 <i>AT</i>	118.32	1.16	PI2_\$CLB		14 30						
<b>4</b> ROUND ALU 7 6061-T6 * ✓ RAL-7 <b>8708</b>  AC17227-TH-2018-06-14	277.08	6.00	PI_\$CLB		10pcs						

NIR : R-109516-6

Next Page...



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935, Boul. du H vre  
Salaberry de Valleyfield (Qu bec) J6S 5L1  
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**Page** 3

#### Billed to

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HAWKESBURY, Ontario, K6A 1K7

#### Shipped to

, Ontario,

Att : CHANTAL LAVOIE T l.: 613-632-5200

**Instruction** F-M

**Delivery Route** 5

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
SAW CUT SCIE  10 X 7.125" LG  LINE#5 Heat 200025409 AT		10.00	UN		104						
5 SHEET SS 20G SS304-2B (4 X 8) ✓ FESS-20G483042B 3430  PALLET EMB 11  4 X 4' X 8'  LINE#6 Heat 697E AT	200.96	128.00	PI2_\$CLB		44						
		1.00	UN								

NIR : R-109516-6

Next Page...





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935, Boul. du H vre  
Salaberry de Valleyfield (Qu bec) J6S 5L1  
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**Carrier** OUELLETTE VALLEYFIELD  
**Credit Terme** Net 30 Days  
**Page** 4

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DART AEROSPACE LTD  
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HAWKESBURY, Ontario, K6A 1K7

#### Shipped to

, Ontario,

Att : CHANTAL LAVOIE T l.: 613-632-5200

**Instruction** F-M

**Delivery Route** 5

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
<b>6</b> ALU SHEET .064 (14G) 5052-H32 RANDOM FEAL-0645052-V <b>3176</b>  2 X 4' X 8' (PVC 1 SIDE)  LINE#7  AC17228-YR-2018-06-14 Heat : 5180160021-6	57.66	64.00	PI2_\$CLB		24 4x8						
<b>7</b> ROUND SS 3/8 304 (R) RSS-38 <b>5768</b>  1 X 12' R/L  LINE#8 Heat : 1711164	4.51	12.00	PI_\$CLB		14 12"						

NIR : R-109516-6

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Page 5

**Billed to**  
DART AEROSPACE LTD  
1270 , ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

### Shipped to

, Ontario,

Att : CHANTAL LAVOIE T l.: 613-632-5200

**Instruction** F-M

**Delivery Route** 5

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
8 ROUND SS 1/2 303 (R) RSS-12303 5727  6 X 12' R/L  LINE#9 Heat : 520R M	48.02	72.00	PI_\$CLB		6x 12'						
9 ROUND SS 3/4 303 (R) RSS-34303 5761  6 X 12' R/L  LINE#10 Heat : 5J049 M	108.14	72.00	PI_\$CLB		6x 12'						

### Conditions :

All sold and delivered materials remain the property of "Acier Ouellette Inc" until payment is made in full, complete and cashed. All lost materials are at the buyer's expense. The warranty offered by "Acier Ouellette Inc." is the same as offered and honored by the manufacturer and his warranty is transferred by "Acier Ouellette Inc." to the client. The buyer hereby accepts to respect the following conditions: Net 30 days from billing date and the buyer accepts to pay administration charges of 2% per month (24% per annum) on all past due amounts over 30 days. Any default in respect with this contract will lead to payment by acceleration and permits to the seller, at his choice to claim for the balance due or the repossession of the goods sold. All claims must be made within five (5) days with this document enclosed. Any merchandise that has been damaged, cut or modified cannot be returned. All goods returned must be with our authorization and are subject to a 25% restocking charge.

**Total Weight (Lbs) :** 985.57

**NIR :** R-109516-6

**Total (\$CAD)**

Prepared By :	Verified By : AM	Delivered By :	Time		Y	M	D
				Customer's Signature	Date		



17524

Dont.

17226N

**Chemical certification**  
**Certification chimique**

Order Num / No. Commande	Vendor / Fournisseur	Country of origin / Pay d'origine	Date	Heat / coulée	Material ID # / No. matière
AC-17226	46	SLOVENIA	08/31/17	300536	
Grade / Nuance	Conditions				
4140 PLT	HEAT TREATED				
Shape / Forme	Size / Dimension	Specifications			
FLAT	3.000	ASTM A829/A829M			

**Chemical composition / Analyse chimique**

Carbon (C)		Silicon (Si)		Manganese (Mn)		Phosphorus (P)	
Mini / maxi	0.3700 / 0.4400	0.1500 / 0.3500		0.6500 / 1.1000		0.0100 / 0.0180	
Actual %	0.410	0.226		0.743		0.007	
Sulphur (S)		Chromium (Cr)		Nickel (Ni)		Molybdenum (Mo)	
Mini / maxi	0.0200 / 0.0400	0.7500 / 1.2000		0.1000 / 0.2000		0.1500 / 0.2500	
Actual %	0.001	0.950		0.530		0.180	
Copper (Cu)		Vanadium (V)		Aluminum (Al)		Tungsten (W)	
Mini / maxi	0.1900 / 0.2900	0.0400 / 0.0500		0.0000 / 0.0000		0.0000 / 0.0000	
Actual %	0.183	0.032		0.032		0.000	
Cobalt (Co)		Titanium (Ti)					
Mini / maxi	0.0000 / 0.0000	0.0000 / 0.0000		0.0000 / 0.0000		0.0000 / 0.0000	
Actual %	0.000	0.000		0.000		0.000	

**Mechanical properties / Propriétés Mécaniques**

Yield strenght / Élasticité	Tensile / Rés. à la traction	Elongation / Allon. (%)	Red. of area / Surface (%)	RC	Surface Hd / Dureté
0.000	PSI	0.000	PSI	0.00	0.00
					270-278 BHN

**Note:**

We certify that the above data has been verified and are conform to an original mill or supplier certificate supplied to us with the material

Nous certifions que les données ci haut on été vérifier et sont conformes d'après un certificat originale qui nous a été fourni par notre fournisseur.

Prepared by: / Préparé par:

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140-5-3.000x8.000  
DATE: 18/06/21

PO / BATCH NO.: P0040159/5082M

MATERIAL CERT REC'D: Yes  
QUANTITY RECEIVED: 244t  
QUANTITY INSPECTED: 244t  
QUANTITY REJECTED: 0

THICKNESS ORDERED: 3"  
THICKNESS RECEIVED: 3"  
SHEET SIZE ORDERED: —  
SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N	
CORRECT FINISH	<input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> N	<u>A57M A824</u>
CORRECT THICKNESS	<input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> N	<u>AT: 360536</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.					
RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRC	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

*Testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT 18/06/21</u> <small>DAS 9-89</small>	SIGNED OFF BY: _____
DATE: <u>18/06/21</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	18-544	18.2.13	VM	ML

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI 4140 / 4142 STEEL SHEET OR PLATE  
 MINIMUM ROCKWELL C = 28 Rc  
 MAXIMUM ROCKWELL C = 32 Rc

SPECIFICATION: ASTM A829 AMS 6395

PART NUMBER: MT-4140-S-[T.TTT] x [W.WWW]  
 WHERE "T.TTT" = THICKNESS IN INCHES  
 WHERE "W.WWW" = WIDTH IN INCHES (OPTIONAL FOR SPECIFYING CUT PLATE)

EX. 0.063" THICK SHEET = MT-4140-S-0.063  
 EX. 3.5" WIDE BY 0.500" THICK PLATE = MT-4140-S-0.500X3.500

<b>DART</b> AEROSPACE	
TITLE AISI 4140 / 4142 STEEL SHEET OR PLATE	
PART NO MT-4140-S	REV A
TOOL NO	
INITIALS AND DATE	
DESIGNED BY VM 2/13/2018	COLORANCES XXX ± .005
DRAWN BY VM 02/13/2018	FRACTIONS ± 1/8
CHECKED BY VM 02/13/2018	XX ± .01
MFG REVIEW BY DD 02/13/2018	ANGLES ± .5°
APPROVED BY ML 02/14/2018	ROUGHNESS
SCALE: NTS SHEET 1 OF 1	
COPYRIGHT © 2018 BY DART AEROSPACE LTD	

# RAPPORT DE TEST MATÉRIEL

4RA 2205 #5925

49964

## Vendu

à : ACIER OUELLETTE INC.

Daniel Filion

22 John-F. Kennedy

St-Jerome, QC

J7Y 4B6

Canada

## Expédier

à : ACIER OUELLETTE INC.

Daniel Filion

22 John-F. Kennedy

St-Jerome, QC

J7Y 4B6

Canada

N° bon de livraison

BL17-01996

Votre n° de commande

AC5674

Date de document

5/23/2017

Notre n° de vente

SO17-00951

Description		1.250 x 1.250 x 288.000 x 0.125 HR A500 B/C									
Heat Number:		745316									
C	Min	P	S	Si	Al	Cu	Cb	Mo	Ni	Cr	V
0.170	0.730	0.004	0.007	0.020	0.340	0.070	0.001	0.005	0.030	0.030	0.001
Yield (Psi)		Tensile (Psi) ELN:21N (%) Certification									
55,100		65,200.00 25.4 ASTM A500 GR B & C									

Description		1.000 x 1.000 x 288.000 x 0.125 HR A500 B/C									
Heat Number		745319									
C	Min	P	S	Si	Al	Cu	Cb	Mo	Ni	Cr	V
0.170	0.720	0.004	0.008	0.020	0.042	0.050	0.001	0.003	0.020	0.040	0.002
Yield (Psi)		Tensile (Psi) ELN:21N (%) Certification									
57,100		65,300.00 25.6 ASTM A500 GR B & C									

Description		1.500 x 1.000 x 288.000 x 0.125 HR A500 B/C									
Heat Number		745320									
C	Min	P	S	Si	Al	Cu	Cb	Mo	Ni	Cr	V
0.170	0.720	0.006	0.007	0.020	0.053	0.060	0.001	0.005	0.020	0.050	0.002
Yield (Psi)		Tensile (Psi) ELN:21N (%) Certification									
55,100		65,200.00 25.9 ASTM A500 GR B & C									

Description		2.000 x 2.000 x 288.000 x 0.125 HR A500 B/C									
Heat Number		784036									
C	Min	P	S	Si	Al	Cu	Cb	Mo	Ni	Cr	V
0.180	0.800	0.008	0.007	0.017	0.046	0.049	0.002	0.004	0.018	0.044	0.002
Yield (Psi)		Tensile (Psi) ELN:21N (%) Certification									
59,800		68,000.00 28 ASTM A500 GR B & C									

Les résultats reportés sur ce document représentent les attributs actuels du matériel fourni et indiquent la conformité complète avec toutes les spécifications applicables et les conditions contractuelles.

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: ASTM A500 STEEL RECTANGULAR TUBING

SPECIFICATION: ASTM A500 OR ASTM A513

PART NUMBER: MT-A500-TR-(H.HHH)x(W.WWW)(T.TT)

WHERE H.HHH IS HEIGHT IN INCHES

WHERE W.WWW IS WIDTH IN INCHES

WHERE T.TT IS WALL THICKNESS IN INCHES

EG. 2" x 1" RECTANGULAR TUBING WITH .188" WALL THICKNESS = MT-A500-TR-2.000x1.000W.188

TOLERANCES PER MANUFACTURER SPECIFICATIONS

<b>DART</b> AEROSPACE		TITLE ASTM A500 STEEL RECTANGULAR TUBING	
COMP MT-A500-TR		DATE 9/12/2017	
DESIGN BY VM 9/8/2017		CHECKED BY VM 9/12/2017	
DRAWN BY VM 9/12/2017		MFG APPR DP 9/12/2017	
QA APPR DP 9/13/2017		APPROVED VM 9/14/2017	
DATE 9/12/2017		SCALE N/A	
COPYRIGHT © 2017 BY DART AEROSPACE LTD		SHEET 1 OF 1	

REV	DESCRIPTION	DATE	BY	APPROVED
A	NEW ISSUE	12 09 08	VM	WM



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-A500-TK-1, 500x1, 000x0.125 PO / BATCH NO: 0640151/5082716  
 DATE: 18/06/21

MATERIAL CERT REC'D: Yes THICKNESS ORDERED: 0.125"  
 QUANTITY RECEIVED: 2441 THICKNESS RECEIVED: 0.125"  
 QUANTITY INSPECTED: 2441 SHEET SIZE ORDERED: —  
 QUANTITY REJECTED: 0 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(V) N	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	(V) N	
CORRECT MATERIAL PER M-DRAWING	(V) N	<u>A57M A500</u>
CORRECT THICKNESS	(V) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(V) N	<u>47:745320</u>
CORRECT MATERIAL IDENTIFICATION	(V) N	
CORRECT M# ON THE MATERIAL	(V) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.					
RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u> <sup>125</sup> 9	SIGNED OFF BY: _____
DATE: <u>18/06/21</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# CERTIFICATE OF TEST CERTIFICAT D'ESSAIS

15954  
Page 01 of 03 (3P)

4937

CUSTOMER ORDER NUMBER  
NUMÉRO DE COMMANDE DU CLIENT

Certification Date  
7-MAY-2018

Invoice Number  
S706880

AC00015954

506433

PART NUMBER/NUMÉRO DE PIÈCE

SOLD TO: ACIER OUELLETTE INC. SHIP TO: ACIER OUELLETTE INC.  
VENDU À: DIVISION SALABERRY DE VALLEYFIELD DIVISION SALABERRY DE VALLEYFIELD  
935, BOUL. DU HAVRE 935, BOUL. DU HAVRE  
SALABERRY-DE-VALLEYFIELD QC J6S 5L1 SALABERRY-DE-VALLEYFIE QC J6S

Description: 4140/4142 HR HT BAR STRESS FREE 269/321 BHN

2 RD X 20 R/L  
HEAT: 75069217

ITEM: 506433

Line Total: 470 LB

Specifications:  
ASTM A193 GR B7 16 ASTM A434 GR BC 17 ASME SA193 GR B7  
ASTM A322 13 JDM AO-OL-2 4/17 EN 10204 3.1  
CAT 1E0024 ASTM A29/A29M 16 MIC 12016 ADD 1 16  
ASTM E112 ASTM E10 15 ASTM A255 10  
ASTM A304 16 ASTM E45 METHOD A 13 ASTM A255 10  
ASTM A370 17 ASTM E8 16 ASTM E381 01

## CHEMICAL ANALYSIS

	C	MN	P	S	SI	NI	CR	MO
	0.41	0.90	0.021	0.035	0.25	0.12	0.91	0.18
	CU	SN	AL	V	B	CA	NB	H
	0.23	0.01	0.025	0.004	0.0005	0.001	0.003	0.0001
RCPT:	R409925							

COUNTRY OF ORIGIN : USA

## MECHANICAL PROPERTIES

DESCRIPTION	YLD STR KSI	ULT TEN KSI	%ELONG IN 02 IN	%RED IN AREA	HARDNESS BHN
	125.0	141.0	20.0	55.0	308

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination. Les informations ci-haut-mentionnées sont transcrites du certificat d'essais du manufacturier après vérification de l'état complet des spécifications inscrites sur le certificat. We hereby certify that the material covered by this report will meet the applicable requirements described herein, including any specification forming a part of the description. Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under Federal statutes. Les informations fausses, fictives ou frauduleuses en rapport avec le résultat des essais sont punissables en vertu des lois fédérales.

Material did not come in contact with mercury while in our possession/Par les présentes, nous certifions que le matériel couvert par ce rapport n'a pas été en contact avec le mercure ci-haut.

MANAGER QUALITY ASSURANCE  
GÉRANT DE L'ASSURANCE QUALITÉ

# CERTIFICATE OF TEST CERTIFICAT D'ESSAIS

Page 02 of 03

Certification Date  
7-MAY-2018

CUSTOMER ORDER NUMBER  
NUMERO DE COMMANDE DU CLIENT  
AC00015954

Invoice Number  
5706880

PART NUMBER/NUMERO DE PIECE  
506433

SOLD TO: ACIER OUELLETTE INC.  
DIVISION SALABERRY DE VALLEYFIELD  
VENDU A: 935, BOUL. DU HAVRE EXPEDIE A: 935, BOUL. DU HAVRE  
SALABERRY-DE- VALLEYFIELD QC J6S 5L1SALABERRY-DE- VALLEYFIE QC J6S

Description: 4140/4142 HR HT BAR STRESS FREE 269/321 BHN  
2 RD X 20' R/L Line Total: 470 LB

HEAT: 75069217															ITEM: 506433														
END-QUENCH HARDENABILITY (JOMINY - RC)																													
1		2		3		4		5		6		7		8		9		10		11		12		13		14		15	
57	57	57	57	57	57	57	56	55	54	52	51	50	49	48	47														
16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46														
46	45	45	45	43	41	40	40	38	36	34	32	30	28	26	24														

IDEAL DIAMETER : 5.3 IN GRAIN SIZE : 5 - 8

## CLEANLINESS

A		B		C		D	
THIN	THICK	THIN	THICK	THIN	THICK	THIN	THICK
MAX	MAX	MAX	MAX	MAX	MAX	MAX	MAX
avg	2.5	0.8	1.0	0.0	0.5	0.0	1.4
							0.4

STRAND CAST VACUUM DEGASSED  
MATERIAL IS FREE FROM MERCURY CONTAMINATION  
NO WELD REPAIR PERFORMED ON MATERIAL  
THERMAL TREATMENT: OK  
AUST TEMP 1635 F TIME (MIN.) 2.20  
QUENCH TEMP 100 F TIME (MIN.) 0.70 MEDIA WATER  
TEMPER TEMP 1350 F TIME (MIN.) 2.20  
MACRO: OK  
MICRO: OK

COMMENTS  
red. ratio 21.76 to 1.0

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The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes. /Les informations fausses, fictives ou frauduleuses en rapport avec le résultat des essais sont punissables en vertu des lois fédérales.

Material did not come in contact with any corrosive substance in our possession. /Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

MANAGER QUALITY ASSURANCE  
GERANT DE L'ASSURANCE QUALITÉ

# CERTIFICATE OF TEST CERTIFICAT D'ESSAIS

Certification Date  
7-MAY-2018

CUSTOMER ORDER NUMBER  
NUMÉRO DE COMMANDE DU CLIENT  
AC 00015954

Invoice Number  
S706880

PART NUMBER/NUMÉRO DE PIÈCE

ACIER OUELLETTE INC.	ACIER OUELLETTE INC.
DIVISION SALABERRY DE VALLEYFIELD	DIVISION SALABERRY DE VALLEYFIELD
935, BOUL. DU HAVRE	935, BOUL. DU HAVRE
SOLD TO:	SHIP TO:
VENDU À: SALABERRY-DE- VALLEYFIELD	SALABERRY-DE- VALLEYFIELD
	QC J6;
Description: 4140/4142 HR HT BAR STRESS FREE 269/321 BHN	
2 RD X 20' R/L	
HEAT: 75069217	ITEM: 506433
100% melted & mfg in usa	
free from radioactive material	
	Line Total: 470 LB

The above data were transcribed from the manufacturer's Certificate of Test after verification for completeness and specification requirements of the information on the certificate. All test results remain on file subject to examination. /Les informations ci-haut-mentionnées sont transcrites du certificat d'essais du manufacturier après vérification de l'état complet des spécifications inscrites sur le certificat. We hereby certify that the material covered by this report will meet the applicable requirements described herein, including any specification forming a part of the description. /Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

The willful recording of false, fictitious, or fraudulent statements in connection with test results may be punishable as a felony under federal statutes. /Les informations fausses, fictives ou frauduleuses en rapport avec le résultat des essais sont punissables en vertu des lois fédérales.

Material did not come in contact with mercury while in our possession./Par les présentes, nous certifions que le matériel couvert par ce rapport rencontre les spécifications décrites ci-haut.

MANAGER QUALITY ASSURANCE  
GÉRANT DE L'ASSURANCE QUALITÉ

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140-R 2.00s  
DATE: 18/06/21

PO / BATCH NO.: P0040154/508278

MATERIAL CERT REC'D: Yes  
QUANTITY RECEIVED: 1244  
QUANTITY INSPECTED: 1244  
QUANTITY REJECTED: 0

THICKNESS ORDERED: 2"  
THICKNESS RECEIVED: 2"  
SHEET SIZE ORDERED: -  
SHEET SIZE RECEIVED: -

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N <input type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
CORROSION	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	ASTM A29
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
PHOTO REQUIRED	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	47: 75064217
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.					
RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRB	HRB	DUR A	DUR D	WEBSTER

Testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AS</u> <u>WAS</u>	SIGNED OFF BY: _____
DATE: <u>18/06/2021</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	17-790	17.12.13	VM	ML

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL : AISI 4140 ROUND BAR  
 MINIMUM ROCKWELL C = 20 Rc  
 MAXIMUM ROCKWELL C = 38 Rc

SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529

PART NUMBER: MT-4140-R-[D.DDD]  
 WHERE "D.DDD" = DIAMETER IN INCHES  
 EX. 4" ROUND BAR = MT-4140-R-4.000

<b>DART</b> AEROSPACE <small>Hawkesbury, Ontario, Canada</small>	
TITLE <b>AISI 4140 ROUND BAR</b>	
PART NO <b>MT-4140-R</b>	REV <b>A</b>
<small>TOOL NO.</small> <small>UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. INTERPRET PER ASME Y14.5M-2003. DIMENSIONS APPLY AFTER FINISHING.</small>	
DESIGNED BY VM 17/12/13	TOLERANCES XXX ± .005 XX ± .01 X ± .1
DRAWN BY VM 12/13/2017	FRACTIONS 1/16 ANGLES 1/2°
CHECKED BY ML 12/19/2017	SURFACE ROUGHNESS
MFG REVIEW BY DP 12/20/2017	SCALE: NTS
APPROVED BY ML 12/20/2017	SHEET 1 OF 1
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3807 本

Leslib

PO-40159  
P44 212V

EN 10204 : 2004 TYPE 3.1

11

ORDER NO : 70602776706  
CUSTOMER :  
DIMENSIONS, mm : 63.500 X 2438 X 6056 ( 2,500 X 98 X 240 INCH )  
STANDARD & GRADE : CSA G40.21-13 / ASTM A572-15 300M/350M / GR50 TYPE 2 (ERDMLR 3246)  
PRODUCT TYPE & DEFINITION : LKX : HOT ROLLED HEAVY PLATE WITH MILL EDGE

MECHANICAL OPERATIONS

[illegible]

					N/M/N2	200	C.	N/M/N2
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[illegible]

7629	702307034137	7.629
7627	7023013056810	
7627	7023013056810	

785347	785347	TT	383.4	561.9	24	0.188	1.240	0.012	0.005	0.202	0.030	0.087	0.039	0.066	66
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[illegible]

605436	605436100000210	366,8	563,9	25	0.177	1.422	0.009	0.085	0.199	0.048	0.073	0.061	0.077	56
--------	-----------------	-------	-------	----	-------	-------	-------	-------	-------	-------	-------	-------	-------	----

7.660	7023013503763	0.189	0.195	0.003	0.212	0.052	0.053	0.038	0.067	59
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[illegible]

ASTM A572-15 300M/350M / GR50 TYPE 2 (EPDMIR 3246) WITH SATISFACTORY RESULTS.

www.erdemir.com.tr







TEST CERTIFICATE  
EN 10204 : 2004 TYPE 3.1

CUSTOMER ORDER NO : 78802776708  
DIMENSIONS, mm : 83.500 X 2438 X 6096 ( 2,500 X 96 X 240 INCH )  
STANDARD & GRADE : CSA G40.21-13 / ASTM A572-15 300M/350M / GR50 TYPE 2 (ERD) (R 3245)  
PRODUCT TYPE & DEFINITION : LKX: HOT ROLLED HEAVY PLATE WITH MILL EDGE

2596 NO MERCURY COMPOUNDS NO WELD REPAIR  
FULLY KILLED AND FINE GRAIN PRACTICE

PRODUCT INFORMATION

TICKET NO	WEIGHT (MT)	HEAT NO	COIL NO	P.S. or SAM	P.P. POS	YIELD	TENSILE %	BEND TEST	Ag or BH	VAL. 1	VAL. 2	VAL. 3	VAL. 4	VAL. 5	VAL. 6	VAL. 7	VAL. 8	VAL. 9	VAL. 10	VAL. 11	VAL. 12	VAL. 13	VAL. 14	VAL. 15	VAL. 16	VAL. 17	VAL. 18	VAL. 19	VAL. 20	VAL. 21	VAL. 22	VAL. 23	VAL. 24	VAL. 25	VAL. 26	VAL. 27	VAL. 28	VAL. 29	VAL. 30	VAL. 31	VAL. 32	VAL. 33	VAL. 34	VAL. 35	VAL. 36	VAL. 37	VAL. 38	VAL. 39	VAL. 40	VAL. 41	VAL. 42	VAL. 43	VAL. 44	VAL. 45	VAL. 46	VAL. 47	VAL. 48	VAL. 49	VAL. 50	VAL. 51	VAL. 52	VAL. 53	VAL. 54	VAL. 55	VAL. 56	VAL. 57	VAL. 58	VAL. 59	VAL. 60	VAL. 61	VAL. 62	VAL. 63	VAL. 64	VAL. 65	VAL. 66	VAL. 67	VAL. 68	VAL. 69	VAL. 70	VAL. 71	VAL. 72	VAL. 73	VAL. 74	VAL. 75	VAL. 76	VAL. 77	VAL. 78	VAL. 79	VAL. 80	VAL. 81	VAL. 82	VAL. 83	VAL. 84	VAL. 85	VAL. 86	VAL. 87	VAL. 88	VAL. 89	VAL. 90	VAL. 91	VAL. 92	VAL. 93	VAL. 94	VAL. 95	VAL. 96	VAL. 97	VAL. 98	VAL. 99	VAL. 100	VAL. 101	VAL. 102	VAL. 103	VAL. 104	VAL. 105	VAL. 106	VAL. 107	VAL. 108	VAL. 109	VAL. 110	VAL. 111	VAL. 112	VAL. 113	VAL. 114	VAL. 115	VAL. 116	VAL. 117	VAL. 118	VAL. 119	VAL. 120	VAL. 121	VAL. 122	VAL. 123	VAL. 124	VAL. 125	VAL. 126	VAL. 127	VAL. 128	VAL. 129	VAL. 130	VAL. 131	VAL. 132	VAL. 133	VAL. 134	VAL. 135	VAL. 136	VAL. 137	VAL. 138	VAL. 139	VAL. 140	VAL. 141	VAL. 142	VAL. 143	VAL. 144	VAL. 145	VAL. 146	VAL. 147	VAL. 148	VAL. 149	VAL. 150	VAL. 151	VAL. 152	VAL. 153	VAL. 154	VAL. 155	VAL. 156	VAL. 157	VAL. 158	VAL. 159	VAL. 160	VAL. 161	VAL. 162	VAL. 163	VAL. 164	VAL. 165	VAL. 166	VAL. 167	VAL. 168	VAL. 169	VAL. 170	VAL. 171	VAL. 172	VAL. 173	VAL. 174	VAL. 175	VAL. 176	VAL. 177	VAL. 178	VAL. 179	VAL. 180	VAL. 181	VAL. 182	VAL. 183	VAL. 184	VAL. 185	VAL. 186	VAL. 187	VAL. 188	VAL. 189	VAL. 190	VAL. 191	VAL. 192	VAL. 193	VAL. 194	VAL. 195	VAL. 196	VAL. 197	VAL. 198	VAL. 199	VAL. 200	VAL. 201	VAL. 202	VAL. 203	VAL. 204	VAL. 205	VAL. 206	VAL. 207	VAL. 208	VAL. 209	VAL. 210	VAL. 211	VAL. 212	VAL. 213	VAL. 214	VAL. 215	VAL. 216	VAL. 217	VAL. 218	VAL. 219	VAL. 220	VAL. 221	VAL. 222	VAL. 223	VAL. 224	VAL. 225	VAL. 226	VAL. 227	VAL. 228	VAL. 229	VAL. 230	VAL. 231	VAL. 232	VAL. 233	VAL. 234	VAL. 235	VAL. 236	VAL. 237	VAL. 238	VAL. 239	VAL. 240	VAL. 241	VAL. 242	VAL. 243	VAL. 244	VAL. 245	VAL. 246	VAL. 247	VAL. 248	VAL. 249	VAL. 250	VAL. 251	VAL. 252	VAL. 253	VAL. 254	VAL. 255	VAL. 256	VAL. 257	VAL. 258	VAL. 259	VAL. 260	VAL. 261	VAL. 262	VAL. 263	VAL. 264	VAL. 265	VAL. 266	VAL. 267	VAL. 268	VAL. 269	VAL. 270	VAL. 271	VAL. 272	VAL. 273	VAL. 274	VAL. 275	VAL. 276	VAL. 277	VAL. 278	VAL. 279	VAL. 280	VAL. 281	VAL. 282	VAL. 283	VAL. 284	VAL. 285	VAL. 286	VAL. 287	VAL. 288	VAL. 289	VAL. 290	VAL. 291	VAL. 292	VAL. 293	VAL. 294	VAL. 295	VAL. 296	VAL. 297	VAL. 298	VAL. 299	VAL. 300	VAL. 301	VAL. 302	VAL. 303	VAL. 304	VAL. 305	VAL. 306	VAL. 307	VAL. 308	VAL. 309	VAL. 310	VAL. 311	VAL. 312	VAL. 313	VAL. 314	VAL. 315	VAL. 316	VAL. 317	VAL. 318	VAL. 319	VAL. 320	VAL. 321	VAL. 322	VAL. 323	VAL. 324	VAL. 325	VAL. 326	VAL. 327	VAL. 328	VAL. 329	VAL. 330	VAL. 331	VAL. 332	VAL. 333	VAL. 334	VAL. 335	VAL. 336	VAL. 337	VAL. 338	VAL. 339	VAL. 340	VAL. 341	VAL. 342	VAL. 343	VAL. 344	VAL. 345	VAL. 346	VAL. 347	VAL. 348	VAL. 349	VAL. 350	VAL. 351	VAL. 352	VAL. 353	VAL. 354	VAL. 355	VAL. 356	VAL. 357	VAL. 358	VAL. 359	VAL. 360	VAL. 361	VAL. 362	VAL. 363	VAL. 364	VAL. 365	VAL. 366	VAL. 367	VAL. 368	VAL. 369	VAL. 370	VAL. 371	VAL. 372	VAL. 373	VAL. 374	VAL. 375	VAL. 376	VAL. 377	VAL. 378	VAL. 379	VAL. 380	VAL. 381	VAL. 382	VAL. 383	VAL. 384	VAL. 385	VAL. 386	VAL. 387	VAL. 388	VAL. 389	VAL. 390	VAL. 391	VAL. 392	VAL. 393	VAL. 394	VAL. 395	VAL. 396	VAL. 397	VAL. 398	VAL. 399	VAL. 400	VAL. 401	VAL. 402	VAL. 403	VAL. 404	VAL. 405	VAL. 406	VAL. 407	VAL. 408	VAL. 409	VAL. 410	VAL. 411	VAL. 412	VAL. 413	VAL. 414	VAL. 415	VAL. 416	VAL. 417	VAL. 418	VAL. 419	VAL. 420	VAL. 421	VAL. 422	VAL. 423	VAL. 424	VAL. 425	VAL. 426	VAL. 427	VAL. 428	VAL. 429	VAL. 430	VAL. 431	VAL. 432	VAL. 433	VAL. 434	VAL. 435	VAL. 436	VAL. 437	VAL. 438	VAL. 439	VAL. 440	VAL. 441	VAL. 442	VAL. 443	VAL. 444	VAL. 445	VAL. 446	VAL. 447	VAL. 448	VAL. 449	VAL. 450	VAL. 451	VAL. 452	VAL. 453	VAL. 454	VAL. 455	VAL. 456	VAL. 457	VAL. 458	VAL. 459	VAL. 460	VAL. 461	VAL. 462	VAL. 463	VAL. 464	VAL. 465	VAL. 466	VAL. 467	VAL. 468	VAL. 469	VAL. 470	VAL. 471	VAL. 472	VAL. 473	VAL. 474	VAL. 475	VAL. 476	VAL. 477	VAL. 478	VAL. 479	VAL. 480	VAL. 481	VAL. 482	VAL. 483	VAL. 484	VAL. 485	VAL. 486	VAL. 487	VAL. 488	VAL. 489	VAL. 490	VAL. 491	VAL. 492	VAL. 493	VAL. 494	VAL. 495	VAL. 496	VAL. 497	VAL. 498	VAL. 499	VAL. 500	VAL. 501	VAL. 502	VAL. 503	VAL. 504	VAL. 505	VAL. 506	VAL. 507	VAL. 508	VAL. 509	VAL. 510	VAL. 511	VAL. 512	VAL. 513	VAL. 514	VAL. 515	VAL. 516	VAL. 517	VAL. 518	VAL. 519	VAL. 520	VAL. 521	VAL. 522	VAL. 523	VAL. 524	VAL. 525	VAL. 526	VAL. 527	VAL. 528	VAL. 529	VAL. 530	VAL. 531	VAL. 532	VAL. 533	VAL. 534	VAL. 535	VAL. 536	VAL. 537	VAL. 538	VAL. 539	VAL. 540	VAL. 541	VAL. 542	VAL. 543	VAL. 544	VAL. 545	VAL. 546	VAL. 547	VAL. 548	VAL. 549	VAL. 550	VAL. 551	VAL. 552	VAL. 553	VAL. 554	VAL. 555	VAL. 556	VAL. 557	VAL. 558	VAL. 559	VAL. 560	VAL. 561	VAL. 562	VAL. 563	VAL. 564	VAL. 565	VAL. 566	VAL. 567	VAL. 568	VAL. 569	VAL. 570	VAL. 571	VAL. 572	VAL. 573	VAL. 574	VAL. 575	VAL. 576	VAL. 577	VAL. 578	VAL. 579	VAL. 580	VAL. 581	VAL. 582	VAL. 583	VAL. 584	VAL. 585	VAL. 586	VAL. 587	VAL. 588	VAL. 589	VAL. 590	VAL. 591	VAL. 592	VAL. 593	VAL. 594	VAL. 595	VAL. 596	VAL. 597	VAL. 598	VAL. 599	VAL. 600	VAL. 601	VAL. 602	VAL. 603	VAL. 604	VAL. 605	VAL. 606	VAL. 607	VAL. 608	VAL. 609	VAL. 610	VAL. 611	VAL. 612	VAL. 613	VAL. 614	VAL. 615	VAL. 616	VAL. 617	VAL. 618	VAL. 619	VAL. 620	VAL. 621	VAL. 622	VAL. 623	VAL. 624	VAL. 625	VAL. 626	VAL. 627	VAL. 628	VAL. 629	VAL. 630	VAL. 631	VAL. 632	VAL. 633	VAL. 634	VAL. 635	VAL. 636	VAL. 637	VAL. 638	VAL. 639	VAL. 640	VAL. 641	VAL. 642	VAL. 643	VAL. 644	VAL. 645	VAL. 646	VAL. 647	VAL. 648	VAL. 649	VAL. 650	VAL. 651	VAL. 652	VAL. 653	VAL. 654	VAL. 655	VAL. 656	VAL. 657	VAL. 658	VAL. 659	VAL. 660	VAL. 661	VAL. 662	VAL. 663	VAL. 664	VAL. 665	VAL. 666	VAL. 667	VAL. 668	VAL. 669	VAL. 670	VAL. 671	VAL. 672	VAL. 673	VAL. 674	VAL. 675	VAL. 676	VAL. 677	VAL. 678	VAL. 679	VAL. 680	VAL. 681	VAL. 682	VAL. 683	VAL. 684	VAL. 685	VAL. 686	VAL. 687	VAL. 688	VAL. 689	VAL. 690	VAL. 691	VAL. 692	VAL. 693	VAL. 694	VAL. 695	VAL. 696	VAL. 697	VAL. 698	VAL. 699	VAL. 700	VAL. 701	VAL. 702	VAL. 703	VAL. 704	VAL. 705	VAL. 706	VAL. 707	VAL. 708	VAL. 709	VAL. 710	VAL. 711	VAL. 712	VAL. 713	VAL. 714	VAL. 715	VAL. 716	VAL. 717	VAL. 718	VAL. 719	VAL. 720	VAL. 721	VAL. 722	VAL. 723	VAL. 724	VAL. 725	VAL. 726	VAL. 727	VAL. 728	VAL. 729	VAL. 730	VAL. 731	VAL. 732	VAL. 733	VAL. 734	VAL. 735	VAL. 736	VAL. 737	VAL. 738	VAL. 739	VAL. 740	VAL. 741	VAL. 742	VAL. 743	VAL. 744	VAL. 745	VAL. 746	VAL. 747	VAL. 748	VAL. 749	VAL. 750	VAL. 751	VAL. 752	VAL. 753	VAL. 754	VAL. 755	VAL. 756	VAL. 757	VAL. 758	VAL. 759	VAL. 760	VAL. 761	VAL. 762	VAL. 763	VAL. 764	VAL. 765	VAL. 766	VAL. 767	VAL. 768	VAL. 769	VAL. 770	VAL. 771	VAL. 772	VAL. 773	VAL. 774	VAL. 775	VAL. 776	VAL. 777	VAL. 778	VAL. 779	VAL. 780	VAL. 781	VAL. 782	VAL. 783	VAL. 784	VAL. 785	VAL. 786	VAL. 787	VAL. 788	VAL. 789	VAL. 790	VAL. 791	VAL. 792	VAL. 793	VAL. 794	VAL. 795	VAL. 796	VAL. 797	VAL. 798	VAL. 799	VAL. 800	VAL. 801	VAL. 802	VAL. 803	VAL. 804	VAL. 805	VAL. 806	VAL. 807	VAL. 808	VAL. 809	VAL. 810	VAL. 811	VAL. 812	VAL. 813	VAL. 814	VAL. 815	VAL. 816	VAL. 817	VAL. 818	VAL. 819	VAL. 820	VAL. 821	VAL. 822	VAL. 823	VAL. 824	VAL. 825	VAL. 826	VAL. 827	VAL. 828	VAL. 829	VAL. 830	VAL. 831	VAL. 832	VAL. 833	VAL. 834	VAL. 835	VAL. 836	VAL. 837	VAL. 838	VAL. 839	VAL. 840	VAL. 841	VAL. 842	VAL. 843	VAL. 844	VAL. 845	VAL. 846	VAL. 847	VAL. 848	VAL. 849	VAL. 850	VAL. 851	VAL. 852	VAL. 853	VAL. 854	VAL. 855	VAL. 856	VAL. 857	VAL. 858	VAL. 859	VAL. 860	VAL. 861	VAL. 862	VAL. 863	VAL. 864	VAL. 865	VAL. 866	VAL. 867	VAL. 868	VAL. 869	VAL. 870	VAL. 871	VAL. 872	VAL. 873	VAL. 874	VAL. 875	VAL. 876	VAL. 877	VAL. 878	VAL. 879	VAL. 880	VAL. 881	VAL. 882	VAL. 883	VAL. 884	VAL. 885	VAL. 886	VAL. 887	VAL. 888	VAL. 889	VAL. 890	VAL. 891	VAL. 892	VAL. 893	VAL. 894	VAL. 895	VAL. 896	VAL. 897	VAL. 898	VAL. 899	VAL. 900	VAL. 901	VAL. 902	VAL. 903	VAL. 904	VAL. 905	VAL. 906	VAL. 907	VAL. 908	VAL. 909	VAL. 910	VAL. 911	VAL. 912	VAL. 913	VAL. 914	VAL. 915	VAL. 916	VAL. 917	VAL. 918	VAL. 919	VAL. 920	VAL. 921	VAL. 922	VAL. 923	VAL. 924	VAL. 925	VAL. 926	VAL. 927	VAL. 928	VAL. 929	VAL. 930	VAL. 931	VAL. 932	VAL. 933	VAL. 934	VAL. 935	VAL. 936	VAL. 937	VAL. 938	VAL. 939	VAL. 940	VAL. 941	VAL. 942	VAL. 943	VAL. 944	VAL. 945	VAL. 946	VAL. 947	VAL. 948	VAL. 949	VAL. 950	VAL. 951	VAL. 952	VAL. 953	VAL. 954	VAL. 955	VAL. 956	VAL. 957	VAL. 958	VAL. 959	VAL. 960	VAL. 961	VAL. 962	VAL. 963	VAL. 964	VAL. 965	VAL. 966	VAL. 967	VAL. 968	VAL. 969	VAL. 970	VAL. 971	VAL. 972	VAL. 973	VAL. 974	VAL. 975	VAL. 976	VAL. 977	VAL. 978	VAL. 979	VAL. 980	VAL. 981	VAL. 982	VAL. 983	VAL. 984	VAL. 985	VAL. 986	VAL. 987	VAL. 988	VAL. 989	VAL. 990	VAL. 991	VAL. 992	VAL. 993	VAL. 994	VAL. 995	VAL. 996	VAL. 997	VAL. 998	VAL. 999	VAL. 1000	VAL. 1001	VAL. 1002	VAL. 1003	VAL. 1004	VAL. 1005	VAL. 1006	VAL. 1007	VAL. 1008	VAL. 1009	VAL. 1010	VAL. 1011	VAL. 1012	VAL. 1013	VAL. 1014	VAL. 1015	VAL. 1016	VAL. 1017	VAL. 1018	VAL. 1019	VAL. 1020	VAL. 1021	VAL. 1022	VAL. 1023	VAL. 1024	VAL. 1025	VAL. 1026	VAL. 1027	VAL. 1028	VAL. 1029	VAL. 1030	VAL. 1031	VAL. 1032	VAL. 1033	VAL. 1034	VAL. 1035	VAL. 1036	VAL. 1037	VAL. 1038	VAL. 1039	VAL. 1040	VAL. 1041	VAL. 1042	VAL. 1043	VAL. 1044	VAL. 1045	VAL. 1046	VAL. 1047	VAL. 1048	VAL. 1049	VAL. 1050	VAL. 1051	VAL. 1052	VAL. 1053	VAL. 1054	VAL. 1055	VAL. 1056	VAL. 1057	VAL. 1058	VAL. 1059	VAL. 1060	VAL. 1061	VAL. 1062	VAL. 1063	VAL. 1064	VAL. 1065	VAL. 1066	VAL. 1067	VAL. 1068	VAL. 1069	VAL. 1070	VAL. 1071	VAL. 1072	VAL. 1073	VAL. 1074	VAL. 1075	VAL. 1076	VAL. 1077	VAL. 1078	VAL. 1079	VAL. 1080	VAL. 1081	VAL. 1082	VAL. 1083	VAL. 1084	VAL. 1085	VAL. 1086	VAL. 1087	VAL. 1088	VAL. 1089	VAL. 1090	VAL. 1091	VAL. 1092	VAL. 1093	VAL. 1094	VAL. 1095	VAL. 1096	VAL. 1097	VAL. 1098	VAL. 1099	VAL. 1100	VAL. 1101	VAL. 1102	VAL. 1103	VAL. 1104	VAL. 1105	VAL. 1106	VAL. 1107	VAL. 1108	VAL. 1109	VAL. 1110	VAL. 1111	VAL. 1112	VAL. 1113	VAL. 1114	VAL. 1115	VAL. 1116	VAL. 1117	VAL
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WE, THE MANUFACTURER, HEREBY CERTIFY THAT THE MATERIAL DESCRIBED HEREIN HAS BEEN MADE BY THE BASIC OXYGEN PROCESS AND TESTED IN ACCORDANCE WITH THE RULES OF CSA G40.21-13 / ASTM A572-15 300M/350M / GR50 TYPE 2 (ERDMLR 3246) WITH SATISFACTORY RESULTS.



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**ERDEMİR**



SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL:

SPECIFICATION:

PART NUMBER:

EXAMPLE:

HOT ROLLED STEEL BAR  
ASTM A36 OR ASTM A1011 OR 44W OR ASTM A1018  
MT-HRS-B-[W.WWWW]x[H.HHH]  
WHERE W.WWWW IS BAR WIDTH IN INCHES  
WHERE H.HHH IS BAR THICKNESS IN INCHES  
MT-HRS-B-2.000x0.250  
TOLERANCES PER MANUFACTURER SPECIFICATIONS



<b>DART</b> AEROSPACE HARDWARE - CHINA - CANADA	
TITL: HOT ROLLED STEEL BAR	
DWG NO:	MT-HRS-B
REV:	B
DESIGN BY: SAC 02/09/2017	
DRAWN BY: SAC 09/26/2017	
CHKD BY: VAI 09/27/2017	
MFG APPR: WM 10/09/2017	
APPROVED: 26/09/2017	
DATE: 26/09/2017	
SCALE: NTS	
SHEET 1 OF 1	
COPYRIGHT © 2017 BY DART AEROSPACE LTD	

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
B	REMOVED LENGTH DIMENSION	17-675	26/09/2017	SAC	WM

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-HES-B-2.500 x 3.500  
 DATE: 18/06/21

PO / BATCH NO.: P0040151/5082729

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 341  
 QUANTITY INSPECTED: 341  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: \_\_\_\_\_  
 THICKNESS RECEIVED: \_\_\_\_\_  
 SHEET SIZE ORDERED: \_\_\_\_\_  
 SHEET SIZE RECEIVED: \_\_\_\_\_

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> N	<u>V/A for best tooling use only PD</u>
CORRECT THICKNESS	<input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> N	<u>MT: 786102</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.					
RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRB	HRB	DUR A	DUR D	WEBSTER

Testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u>	SIGNED OFF BY: _____
DATE: <u>18/06/21</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

94527

Dart

1-7227-N

# KAISER ALUMINUM FABRICATED PRODUCTS

*Product in  
Bag*
**CERTIFIED TEST REPORT**  
<http://Online.KaiserAluminum.com>

KAISER ALUMINUM  
FABRICATED PRODUCTS, LLC  
5205 KAISER DRIVE  
KALAMAZOO, MI 49048

CUSTOMER PO NUMBER:		CUSTOMER PART NUMBER:		PRODUCT DESCRIPTION:	
5400396921-7		ALRD00065		KAISERSELECT PRECISION ROD 7.000 +/- .022	
KAISER ORDER NUMBER:	LINE ITEM:	SHIP DATE:	KAISER LOT NUMBER:	ALLOY:	TEMPER:
6051775	007	04/20/2018	Z00025409	6061	T6511B
WEIGHT SHIPPED:	QUANTITY:	B/L NUMBER:	DIAM/DAF/THKNS:	WIDTH:	LENGTH:
2172.000 LB	4.000 PCS	622542			12.000 FT
SHIP TO:	SOLD TO:				

## Actual Physical Properties

REFERENCE	DASH#	SAMPLE#	UTS(KSI)	YTS(KSI)	ELONG%	HARDNESS	CONDUCT.	BEND
Z00025409	0001	0001	56.9	53.6	12.1	RE 95	N/A	N/A
Z00025409	0002	0001	55.0	50.9	12.6	RE 94	N/A	N/A

## Chemical Composition (wt%), Aluminum Remainder

LIMITS	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Pb	Bi	Zr	Ea	Tot
Maximum	0.80	0.70	0.40	0.15	1.20	0.35	0.25	0.15	NA	NA	NA	0.05	0.15
Minimum	0.40	0.00	0.15	0.00	0.80	0.04	0.00	0.00	NA	NA	NA	0.00	0.00
108482	.75	.29	.29	.09	.93	.10	.06	.02	.00	.00	.00	.01	.03

## Applicable Requirements:

PER ASTM-B21-14, STENCILED ASME-SB221 2009 SECT II PER AMS-QQ-A-200/8A UNS# A96061  
 MEETS ALL SPECIFICATION REQUIREMENTS FOR 6061-T6511/T6 ELEVATED MINIMUM MECHANICAL  
 PROPERTIES AS FOLLOWS: UTS = 42.0 KSI MIN YIELD = 38.0 KSI MIN ELONGATION = 10.0% MIN

## Miscellaneous Notes

MANUFACTURED IN USA MELTED IN USA  
 MERCURY IS NOT A NORMAL BACKGROUND ELEMENT IN ALUMINUM ALLOYS. NEITHER MERCURY NOR ANY  
 OF ITS COMPOUNDS ARE UTILITIZED BY KAISER ALUMINUM IN THE MANUFACTURE OF THIS MATERIAL.

## CERTIFICATION

Kaiser Aluminum Fabricated Products, LLC hereby certifies that metal shipped under this order has been  
 inspected and tested and found in conformance with applicable specifications forming a part of the  
 description set forth in Kaiser's sales acknowledgement form. Any warranty is limited to that shown on  
 Kaiser's general terms and conditions of sale. Test reports are on file, subject to examination.

Aimee L. Macnowski, Quality & Technology Manager

*Aimee L. Macnowski*

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: 11606176R2.000  
DATE: 18/06/21

PO / BATCH NO.: 20040157/50328a

MATERIAL CERT REC'D: Yes  
QUANTITY RECEIVED: 5.934 ft  
QUANTITY INSPECTED: 5.938 ft  
QUANTITY REJECTED: 0

THICKNESS ORDERED: 2.125"  
THICKNESS RECEIVED: 2.115"  
SHEET SIZE ORDERED: -  
SHEET SIZE RECEIVED: -

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> N	<u>AMS-88A-A-28018</u>
CORRECT THICKNESS	<input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> N	<u>HT: 200023409</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.					
RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRB	HRB	DUR A	DUR D	WEBSTER

*Testers located in the Quality Office*

<b>QC 18 INSPECTION</b>		<b>ENGINEERING SIGNOFF (if required)</b>	
INSPECTED BY: <u>AT 18/06/21</u>	DAS	SIGNED OFF BY: _____	
DATE: <u>18/06/21</u>	9:00	DATE: _____	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: M6061T6/T651/T6510/T6511/T62 ALUMINUM ROUND BAR

SPECIFICATION: QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221

PART NUMBER: M6061T6R | D DDD |  
DIA

WHERE "D DDD" = DIAMETER IN INCHES

EG. 5/8" ROUND BAR = M6061T6R0 625

**RELEASED**  
2009-09-09  
*MB*

B	REFORMAT DWG. ADD B211& B221 SPEC (ZN D8-1).	CP	09.07.13
A	NI W ISSUE	DS	01.06.08
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG APPR			
APPROVED			
DE APPR			
DATE	09.07.13		

<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. <b>M6061T6R</b>	REV. B
TITLE <b>6061-T6 ROUND BAR</b>	SHEET 1 OF 1
SCALE NTS	
COPYRIGHT © 2001 BY DART AEROSPACE LTD	



North American Stainless Canada Inc.  
740 Imperial Road North  
Guelph, ON N1K1Z3  
Canada

# METALLURGICAL TEST REPORT

50899 15908  
6870 Highway 42 East  
Ghent, KY 41045-9615  
(502) 347-6000

Certificate: 380647 1 Mail To:

Ship To:

Date: 2/12/2018 Page: 1

Steel: 304

Customer: 007036 016

Finish: 2B

Corrosion: ASTM A262/15 A; 180Bend-OK

Your Order: 4500849627

NAS Order: DS 0013475 01

## PRODUCT DESCRIPTION:

STAINLESS STEEL COIL, C.R. ANNEALED & PICKLED; UNS 30400  
ASTM A240/17, A480/16b, A666/15; ASME SA240/17, SA480/17, SA666/17  
CHEM ONLY ON FOLLOWING ASTM: A276/17, A479/17, A484/16, A312/16  
CHEM ONLY ON FOLLOWING ASME: SA312/13, SA479/13  
AMS 5513J XMRK; MIL-S-5059D AMEND3 (X CROWN MEAS)  
NACE MR0175/ISO 15156-3:2009 A, MR0103/07; QQS766D-A X MAG PERM  
MIN. SOLUTION ANNEAL TEMP 1900F, WATER QUENCHED

## REMARKS:

Mat'l is Free of Mercury Contamination. No weld repairs.  
EN 10204:2004 3.1; RoHS 1 & 2 Compliant  
Material is Free of Radioactive Contamination  
Steel Making Process: EAF, AOD, & Cont. Casting  
Product Mfg. by a Quality Mgt. Sys. in Conf. w/ISO 9001  
\*Melted & Manufactured in the USA; Mat'l is DFARS Compliant

Product Id	Coil #	Skid #	Thickness	Width	Weight	Length	Mark	Pieces	Commodity Code
02697E A	02697E A		.0360	48.0000	10,360	COIL	3	1	160009446

Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323  
Chemical Analysis per ASTM A751/14a

## CHEMICAL ANALYSIS

CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan)

HEAT	CM	C %	CR %	CU %	MN %	MO %	N %	NI %	P %	S %
697E	US	.0368	18.0895	.4090	1.6780	.3390	.0719	8.0505	.0305	.0011
SI %										
.2505										

## MECHANICAL PROPERTIES

Product Id#	Coil #	1 d o i c r	UTS KSI	20C .2% YS KSI	20C ELONG %-2"	% Hard RB	Tail Hard
02697E A	02697E A	F T	103.25	52.54	54.54	87.00	86.50

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical  
Dept. Mgr.

KRIS LARK

2/12/2018

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS SHEET  
ANNEXED

SPECIFICATION: MIL-S-5059  
OR AMS 5513 (304)  
OR AMS 5524 (316)  
OR ASTM A240  
OR ASME SA240

FINISH

FINISH	DART M-NUMBER IDENTIFIER
UNPOLISHED No. 1	1P
UNPOLISHED No. 2D	2D
UNPOLISHED No. 2B	NONE
POLISHED No. 3	3P
POLISHED No. 4	4P
BUFFED No. 6	6P
BUFFED No. 7	7P
BUFFED No. 8	8P

PART NUMBER: M304S TT GA #P  
GA

WHERE "TT" = GAUGE THICKNESS  
WHERE "#P" = FINISH IDENTIFIER

EG. 16 GAUGE SS SHEET 2B FINISH = M304S16GA  
EG. 16 GAUGE SS SHEET No. 4 POLISHED = M304S16GA4P

GAUGE THICKNESS REFERENCE:

GAUGE	NOM. THICK. (IN)	THICKNESS RANGE (IN)
26	0.01875	0.0178 - 0.019
25	0.021875	0.0199 - 0.023
24	0.025	0.024 - 0.026
23	0.028125	0.027 - 0.029
22	0.03125	0.030 - 0.032
21	0.034375	0.033 - 0.035
20	0.0375	0.036 - 0.040
19	0.04375	0.041 - 0.046
18	0.050	0.047 - 0.052
17	0.05625	0.053 - 0.058
16	0.0625	0.059 - 0.065
15	0.0703125	0.066 - 0.072
14	0.078125	0.073 - 0.083
13	0.09375	0.084 - 0.098
12	0.109375	0.099 - 0.114
11	0.125	0.115 - 0.130
10	0.140625	0.131 - 0.145
9	0.15625	0.146 - 0.160
8	0.171875	0.161 - 0.176
7	0.1875	0.182 - 0.194
6	0.2031	0.194 - 0.212
5	0.2188	0.201 - 0.228
4	0.2344	0.225 - 0.243
3	0.2500	0.238 - 0.262
2	0.2656	0.254 - 0.278
1	0.2813	0.269 - 0.293
0	0.3125	0.301 - 0.325

**RELEASED**

2015 FEB 04

ECN 15-122 47

DESIGN	DS	DART AEROSPACE LTD	
DRAWN	AJS	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO	REV. D
MFG. APPR.		M304S	SHEET 1 OF 1
APPROVED		TITLE	SCALE
DE APPR.		304/316 SS SHEET	NTS
DATE	15.01.06	COPYRIGHT © 2001 BY DART AEROSPACE LTD	



# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M3045206A  
DATE: 18/06/21

PO / BATCH NO.: P0040154 / 5082801

MATERIAL CERT REC'D: KS  
QUANTITY RECEIVED: 12851  
QUANTITY INSPECTED: 12834  
QUANTITY REJECTED: 0

THICKNESS ORDERED: .040  
THICKNESS RECEIVED: .040  
SHEET SIZE ORDERED: 48" x 96"  
SHEET SIZE RECEIVED: 48" x 96"

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	Y <input checked="" type="checkbox"/>	
CORROSION	Y <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="checkbox"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="checkbox"/>	ASTM A240
CORRECT THICKNESS	Y <input checked="" type="checkbox"/>	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="checkbox"/>	HT: 6476
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="checkbox"/>	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="checkbox"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.					
RECORD RESULTS BELOW					
TYPE OF MATERIAL	HRB	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

Testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AS</u>	SIGNED OFF BY: _____
DATE: <u>18/06/21</u>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

94527

Dart

17228N

**GKO****ZHE JIANG GKO ALUMINIUM STOCK CO., LTD.**

XIATAO, FENGJIANG, LUQIAO, TAIZHOU, ZHEJIANG, CHINA

TEL.: +86 576 82696583 FAX.: +86 576 82696589

**MILL TEST REPORT**

BUYER:  
EMPIRE RESOURCES, INC.  
2115 LINWOOD AVENUE  
FORT LEE, NJ 07024

Date: 2018-3-20

Invoice: CI01527-1

Contract No.: U01527

Loading Port: Tianjin, China

COUNTRY OF MELT &amp; MANUFACTURE: CHINA

MATERIAL GRADE: 5052H32 AS PER "ASTM B209-14" - AMS/ QQ A 250/8 AND AMS 4016M

Destination: TORONTO

B/L NO.: MAEU964234588

ISF NO.:

ETD: 2018-3-17

No.	PO NO.	DESCRIPTION OF GOODS	ALLOY/T EMER	Specification (inch)	Bundle No.	N.W.	HEAT NO.	Chemical Composition(%)										Mechanical Properties		
						(lbs)		Al	Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ti	T.S (ksi)	Yield.S (ksi)	E(%)
1	U01527	SHEET	5052H32	0.05*48*96	5180160140-3	3272	5180160140	96.89	0.094	0.302	0.007	0.055	2.430	0.199	0.004	0.006	0.014	33.4	24.5	12.0
2	U01527	SHEET	5052H32	0.05*48*96	5180160140-2	3488	5180160140	96.89	0.094	0.302	0.007	0.055	2.430	0.199	0.004	0.006	0.014	33.4	24.5	12.0
3	U01527	SHEET	5052H32	0.05*48*96	5180160140-I	3492	5180160140	96.89	0.094	0.302	0.007	0.055	2.430	0.199	0.004	0.006	0.014	33.4	24.5	12.0
4	U01527	SHEET	5052H32	0.063*48*96	5180160021-4	3770	5180160021	96.92	0.099	0.299	0.004	0.013	2.440	0.200	0.004	0.006	0.012	34.1	24.9	11.0
5	U01527	SHEET	5052H32	0.063*48*96	5180160021-5	3770	5180160021	96.92	0.099	0.299	0.004	0.013	2.440	0.200	0.004	0.006	0.012	34.1	24.9	11.0
6	U01527	SHEET	5052H32	0.063*48*96	5180160021-3	3774	5180160021	96.92	0.099	0.299	0.004	0.013	2.440	0.200	0.004	0.006	0.012	34.1	24.9	11.0
7	U01527	SHEET	5052H32	0.063*48*96	5180160021-7	3774	5180160021	96.92	0.099	0.299	0.004	0.013	2.440	0.200	0.004	0.006	0.012	34.1	24.9	11.0
8	U01527	SHEET	5052H32	0.063*48*96	5180160021-6	3783	5180160021	96.92	0.099	0.299	0.004	0.013	2.440	0.200	0.004	0.006	0.012	34.1	24.9	11.0
9	U01527	SHEET	5052H32	0.063*48*120	5180160153-1	3430	5180160153	96.88	0.106	0.313	0.007	0.061	2.410	0.192	0.005	0.008	0.015	33.4	29.0	13.0
10	U01527	SHEET	5052H32	0.063*48*120	5180160153-3	3435	5180160153	96.88	0.106	0.313	0.007	0.061	2.410	0.192	0.005	0.008	0.015	33.4	29.0	13.0
11	U01527	SHEET	5052H32	0.063*48*120	5180160153-2	3457	5180160153	96.88	0.106	0.313	0.007	0.061	2.410	0.192	0.005	0.008	0.015	33.4	29.0	13.0
12	U01527	SHEET	5052H32	0.08*48*96	5180160148-7	3272	5180160148	96.95	0.089	0.263	0.009	0.054	2.390	0.215	0.004	0.007	0.015	32.6	29.0	14.0
13	U01527	SHEET	5052H32	0.08*48*96	5180160148-6	3280	5180160148	96.95	0.089	0.263	0.009	0.054	2.390	0.215	0.004	0.007	0.015	32.6	29.0	14.0
14	U01527	SHEET	5052H32	0.08*48*96	5180160148-4	3289	5180160148	96.95	0.089	0.263	0.009	0.054	2.390	0.215	0.004	0.007	0.015	32.6	29.0	14.0
15	U01527	SHEET	5052H32	0.08*48*96	5180160148-5	3298	5180160148	96.95	0.089	0.263	0.009	0.054	2.390	0.215	0.004	0.007	0.015	32.6	29.0	14.0

16	U01527	SHEET	5052H32	0.09*48*96	5180160100-C-1	2734	5180160100	96.81	0.103	0.311	0.012	0.085	2.450	0.204	0.005	0.006	0.016	31.9	29.0	11.0
17	U01527	SHEET	5052H32	0.09*48*96	5180160100-C-2	2738	5180160100	96.81	0.103	0.311	0.012	0.085	2.450	0.204	0.005	0.006	0.016	31.9	29.0	11.0
18	U01527	SHEET	5052H32	0.09*48*96	5180160100-C-3	3320	5180160100	96.81	0.103	0.311	0.012	0.085	2.450	0.204	0.005	0.006	0.016	31.9	29.0	11.0
19	U01527	SHEET	5052H32	0.09*48*120	5180160158-4	3404	5180160158	96.89	0.109	0.306	0.008	0.063	2.410	0.196	0.005	0.008	0.010	33.4	29.0	12.0
20	U01527	SHEET	5052H32	0.09*48*120	5180160158-6	3404	5180160158	96.89	0.109	0.306	0.008	0.063	2.410	0.196	0.005	0.008	0.010	33.4	29.0	12.0
21	U01527	SHEET	5052H32	0.09*48*120	5180160158-5	3408	5180160158	96.89	0.109	0.306	0.008	0.063	2.410	0.196	0.005	0.008	0.010	33.4	29.0	12.0

ZHEJIANG GKO ALUMINIUM STOCK CO., LTD.

浙江巨科铝业股份有限公司  
ZHEJIANG GKO ALUMINIUM STOCK CO., LTD.



## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: 5052-H32 ALUMINUM SHEET

SPECIFICATION: QQ-A-250/8 OR AMS-QQ-A-250/8  
OR AMS 4016  
OR ASTM B209

PART NUMBER: M5052H32S | .XXX |  
| THK |

WHERE ".XXX" = SHEET THICKNESS (IN INCHES)

EG. 0.063" THICK SHEET = M5052H32.063

PREFERRED SIZE: .XXX BY 4FT BY 8FT

**RELEASED**  
2009-10-30  
*WP*

B	REFORMAT DWG. ADD B209 SPEC (ZN D8-1), PAR 08-020A	CP	09 09 26
A	NEW ISSUE	DS	01 06 05
REV	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG APPR			
APPROVED			
DE APPR			
DATE	09 09 26		

<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. <b>M5052H32S</b>	REV B
TITLE <b>5052-H32 SHEET SPEC</b>	SHEET 1 OF 1
SCALE N15	
COPYRIGHT © 2001 BY DART AEROSPACE LTD	

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M50524325.063

PO / BATCH NO.: 10040157/509282

DATE: 18/06/21

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 645t  
 QUANTITY INSPECTED: 645t  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .063"  
 THICKNESS RECEIVED: .063"  
 SHEET SIZE ORDERED: 4'x8'  
 SHEET SIZE RECEIVED: 4'x8'

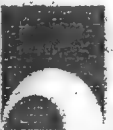
DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	(X) N	
CORROSION	Y (X)	
CORRECT GRAIN DIRECTION	(X) N	
CORRECT MATERIAL PER M-DRAWING	(X) N	QQ-A - 250/8
CORRECT THICKNESS	(X) N	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	(X) N	M7518060021-6
CORRECT MATERIAL IDENTIFICATION	(X) N	
CORRECT M# ON THE MATERIAL	(X) N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.				
RECORD RESULTS BELOW				
TYPE OF MATERIAL	HRB	DUR A	DUR D	WEBSTER
SIZE OF TEST SAMPLE				
HARDNESS / DUROMETER READING				

Testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY: <u>A. Hest</u>	DAS	SIGNED OFF BY:	
DATE: <u>18/06/21</u>	3-69	DATE:	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in



#5768 57045  
CHANDAN STEEL LIMITED  
(GOVT. OF INDIA RECOGNISED EXPORT HOUSE)

ISO 9001:2008 CERTIFICATE No. 08JIN111022

P.O. 16802

ADD: OFFICE 304, GROUND FLOOR, N/5757, TANK ALAKA, MUMBAI-400 005, INDIA  
Tel: 91-22-66290600, Fax: 91-22-66290633/34  
Website: [www.chandansteel.net](http://www.chandansteel.net)  
Email: [info@chandansteel.net](mailto:info@chandansteel.net)

WORKSHEET NO. N/10-45/16/40, & 49/24/2  
(BY: AREA/CIDC, UMABENGAON & SILVER NO. 102/2 & 5, VILLAGE,  
DEHARU, TALUKA/UMABENGAON, DIST/VALSAAD, GUJARAT - 366171  
GSTIN-24AAACC0215112G

L/c. No. 3  
I/c. Date:

FG24 QC 09A/02/10.12.2012

### MILL TEST / INSPECTION CERTIFICATE 3.1 ACCORDING TO EN 10204 : 2005

Consignee		Test Certificate No. : EXP/01152 - 06/2017-2018									
		Date of Issue : 03.01.2018									
		P. O. No. : MNS942									
		QC No. & Date : T/19/00447/ Dt:08.11.2017									
		Invoice No. & Date : EXP/01152/2017-18 Dt:03.01.2018									
PRODUCT DESCRIPTION STAINLESS STEEL ROUND BARS		<table border="1"> <tr> <th colspan="2">LENGTH</th> <th rowspan="2">Net Wt.</th> </tr> <tr> <th>Ordered</th> <th>Actual</th> </tr> <tr> <td>12" - 14"</td> <td>12" - 14"</td> <td>2965 Lbs.</td> </tr> </table>		LENGTH		Net Wt.	Ordered	Actual	12" - 14"	12" - 14"	2965 Lbs.
LENGTH		Net Wt.									
Ordered	Actual										
12" - 14"	12" - 14"	2965 Lbs.									
Heat No. 1711164	Grade AISI 304L	Size 3/8"	Tolerance ± 9								
PROCESS ROUTE Electric Melting, A.O.D. Refining, Continuous Casting											
CHEMICAL COMPOSITION (Weight %)											
C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Ti	N	
Min. -	-	-	-	-	18.00	-	-	-	-	-	
Max. 0.030	1.00	2.00	0.045	0.030	20.00	-	12.00	-	-	+	
Results 0.028	0.37	1.57	0.039	0.016	18.55	-	8.04	-	-	-	
MECHANICAL PROPERTIES											
Specified Value	Yield Strength N/mm <sup>2</sup> /MPa (Rp0.2)	Tensile Strength N/mm <sup>2</sup> /MPa (Rm)	Elongation %	Reduction of Area %	Hardness (HB)						
Min.	310	620	30	40	-						
Max.	-	-	-	-	-						
Results	615	786	36	65	239-242						
Remarks:											
1. Cold drawn & Centreless Ground.											
2. Solution annealed at 1050 °C.											
3. PMI test done 100% & found Satisfactory.											
4. Material is free from radio-active contamination.											
5. Inter-Granular Corrosion Test as per ASTM A262 - 1B (Pt. B) satisfactory.											
6. The material conforms to ASTM A276-15/A182-15/A479-15 & ASME B/A479-13 Specifications.											
7. Location of sample - Centre, Direction - Longitudinal, Test Temp. - Room Temp. Shape of Test Piece - Round.											
8. Marking details - Company Logo, Size, Grade & Heat No.											
9. The material is manufactured/melt in Chandan Steel Mill and is of Indian Origin.											
10. No welding/weld repairs was performed on this material.											
BUNDLE NO.: 21 & 22											



It is hereby certified that the above results are true and correct in every details and are meeting the requirements of specification & purchase order.

B. S. RAUTELA  
MANAGER - QUALITY ASSURANCE

## SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 304/316 SS ROUND BAR  
(NOTE: AISI 303 NOT ACCEPTABLE)

/B SPECIFICATION: ASTM A276

PART NUMBER: M304R | D.DDD |  
DIA

WHERE "D.DDD" = DIAMETER IN INCHES

EG: 0.75" ROUND BAR = M304R0.750

RELEASED  
09/08/23/14

B	REFORMAT DWG. ADD SPECS (ZN D6-1). REF PAR 06-020A	09.07.15
A	NEW ISSUE	08.03.03
REV	DESCRIPTION	BY DATE
DESIGN	<i>AJS</i>	
DRAWN	<i>JD</i>	
CHECKED	<i>JD</i>	
MFG APPR	<i>JD</i>	
APPROVED	<i>JD</i>	
DE APPR	<i>JD</i>	
DATE	09.07.15	
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. B
DRAWING NO M304R		SHEET 1 OF 1
TITLE 304/316 ROUND BAR		SCALE NTS
COPYRIGHT © 2008 BY DART AEROSPACE LTD		

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M30xR0.375  
DATE: 18/06/21

PO / BATCH NO.: P0040159 / 5082903

MATERIAL CERT REC'D: Yes  
QUANTITY RECEIVED: 12.5t  
QUANTITY INSPECTED: 12.5t  
QUANTITY REJECTED: 0

THICKNESS ORDERED: .375"  
THICKNESS RECEIVED: .375"  
SHEET SIZE ORDERED: -  
SHEET SIZE RECEIVED: -

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	<u>ASTM A276</u>
CORRECT THICKNESS	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	<u>HT: 1711164</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> Y <input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/> N <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.					
RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING					
	HRC	HRB	DUR A	DUR D	WEBSTER

*Testers located in the Quality Office*

1

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u> <small>DAS</small>	SIGNED OFF BY: _____
DATE: <u>18/06/21</u> <small>515</small>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in





North American Stainless Canada Inc.  
740 Imperial Road North  
Guelph, ON N1K1Z3  
Canada

# 5727

RSS-12302-U

# METALLURGICAL TEST REPORT

PO. 12848  
6870 Highway 42 East  
Ghent, KY 41045-9615  
(502) 347-6000

49923

Certificate: 371391 3 Mail To:

Ship To:

Date: 1/15/2018 Page: 1

Customer: 007080 003

Steel: 303

Finish: CD

Corrosion:

Your Order: MH6001

NAS Order: IN 0257533 05 Heat Treat Code: 43,147

## PRODUCT DESCRIPTION:

Round Bar, Annealed, Cold Draw  
UNS J0300, ASTM A582/12 EN 10206 3.1, ASTM A484/16  
AMS 5640V TYPE 1, QSS-764B CONDITION A  
SOLUTION ANNEAL TEST 19007 MIN, ASTM F899/12b

## REMARKS:

COMPLIES W/REQUIREMENTS OF DFM 252.225-7009 EU DIRECTIVE  
2011/65/EU. RoHS. EAF+ACD+CC. NO WELD REPAIR. MELTED AND MFG  
IN USA FREE FROM MERCURY AND LOW MELTING ALLOY CONTAMINATION

Product Id	Strid #	Diameter	Size	Weight	-----Length-----	Mark	Pieces	Commodity Code
BI9788 9		.5000		1.073	144.00	7	1	

Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323

## CHEMICAL ANALYSIS

CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan)

Chemical Analysis per ASTM A751/14a

NBS Heat	CM	C %	CO %	CR %	CU %	MM %	MO %	N %	NI %	P %
520R AT	US	.026	.13	17.09	.35	1.83	.275	.050	8.50	.031
		S %	SI %							
		.3010	.30							

## MECHANICAL PROPERTIES

Product Id	1 d o i c x	HB No.	.2YS KSI	UTS KSI	RA %	Elong % 2"
BI9788 9	R L	191.0	69.04	100.58	41.70	29.90

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical  
Dept. Mgr.

KRIS LARK

1/15/2018

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 303 SS ROUND BAR  
(NOTE: AISI 304/316 NOT ACCEPTABLE)

△

SPECIFICATION: ASTM A582

PART NUMBER: M303R D.DDD  
DIA.

WHERE "D DDD" = DIAMETER IN INCHES

EG 0.75" ROUND BAR = M303R0.750

RELEASED  
2010-02-02  
AND

B	REFORMAT DWG. ADD SPECS (LN DB-1), REF PAR 08-020A	CP	10 01.05
A	NEW ISSUE	DS	01 12.20
REV	DESCRIPTION	BY	DATE
DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO	REV. B
MFG. APPR.		M303R	SHEET 1 OF 1
APPROVED		TITLE	SCALE
DE APPR.		303 ROUND BAR	NTS
DATE	10.01.05	COPYRIGHT © 2001 BY DART AEROSPACE LTD	

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M303 R0.500  
DATE: 18/06/21

PO / BATCH NO.: P0040134 / 5082804

MATERIAL CERT REC'D: Yes  
QUANTITY RECEIVED: 72H  
QUANTITY INSPECTED: 72H  
QUANTITY REJECTED: 0

THICKNESS ORDERED: 5.00"  
THICKNESS RECEIVED: 5.00"  
SHEET SIZE ORDERED: -  
SHEET SIZE RECEIVED: -

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y (N)	
CORRECT FINISH	Y (N)	
CORROSION	Y (N)	
CORRECT GRAIN DIRECTION	Y (N)	
CORRECT MATERIAL PER M-DRAWING	Y (N)	ASTM A582
CORRECT THICKNESS	Y (N)	
PHOTO REQUIRED	Y (N)	
CORRECT REF # TO LINK CERT	Y (N)	47.5206
CORRECT MATERIAL IDENTIFICATION	Y (N)	
CORRECT M# ON THE MATERIAL	Y (N)	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y (N)	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y (N)	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRB	HRB	DUR A	DUR D	WEBSTER

Testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u> <small>DAS</small>	SIGNED OFF BY: _____
DATE: <u>18/06/21</u> <small>5:45</small>	DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

5761

RSS-34303

51361

17303



# INSPECTION CERTIFICATE

WALSH LINER CORP.

YUNYI PLANT  
NO. 1-10, SHEN CHIAO, CHEN SHI LI,  
YUNYI DIST TAIWAN CITY 77143, TAIWAN, R.O.C.  
TEL: 886-4-234-0111 FAX: 886-4-234-0114

CUSTOMER: TA CHEN INTERNATIONAL, INC.

COMMODITY: Stainless Steel Cold Draw Round Bar (A)

CERTIFICATE NO: A1711280242

ORDER NO.: 106090007/248468

SPECIFICATION: 303

DOC No.1

LC NO: N/A

SUPPLY CONDITION: CD

DATE OF ISSUE: 2017/11/20

Heat No		Thick (Dia)	Pcs	Wt (LBS)	Chemical Composition(wt%)													Mechanical Property						BOUNDLE NO
					C	Si	Mn	P	S	Ni	Cr	Mo	Cu	N				TS	YS	EL	RA	HRB	HRC	
					x100	x100	x100	x1000	x1000	x100	x100	x100	x100	x100	x10000				N/mm2	N/mm2	%	%		
Spec	Mis Max							150	800	1700										103				
51049		3/4"	69	1254	5.6	27	184	27	328.4	927	1810	11	55	221				710	535	33	46	97	WL17165008	
51397		3/4"	68	1239	5.9	24	193	28	229.4	803	1765	17	74	353				733	603	33	40	95	WL17165009	
Total:				2493																				

TOLERANCE: 2494

LENGTH TOLERANCE: 0-30

Acc. to ASTM A484-12 Cond.A.

Acc. to ASTM A484 type 1/00-0-740 chemistry only.

This inspection certificate is issued according to EN 10204 2.2

## Remark:

Melted manufactured: Taiwan, Improved machining.  
Solution annealed treatment: Acc. to ASTM A484.

SUPPLY CONDITION:  
A: Annealed  
B: Shot Blasted  
C: As Casted  
E: Peened/Thin Pass  
H: Pickle/Shot Hardening  
M: Hot Rolled  
N: Straightened  
K: Cut Edge  
L: Polished  
M: Cold Rolled  
P: Peened  
S: Shaved  
V: Dr  
W: Cut  
X: Temper  
CD: Cold Draw  
CG: Centerless Ground  
PL: Turned or Peened

We have the following certifications  
1. ISO 9001:2015 Quality Management System  
2. ISO/IEC 17025:2005 Laboratory Management System  
3. PED & AD2000-Machinery WD  
4. DNV - LR - ABS Classification Society certification  
5. ISO 14001:2004 Environment Management System  
6. OHSAS 18001:2007 & TQMMS Certificate

TEST METHOD :  
CHEMICAL-ASTM E1006, E415, E1006, E1019

**SLKuan.**  
Quality Assurance Responsible Personnel

- We hereby certify that material described herein has been manufactured and tested with satisfactory results in accordance with requirement of the above material specification.
- We certify that the material is free from mercury and radiation contamination. Qualification No. of Taiwan Atomic Energy Committee: 136
- The Above Testing Results Relate Only To The Items Tested.
- No welding repaired

# MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M303Ro.750  
DATE: 19/06/21

PO / BATCH NO.: P0010159/50885

MATERIAL CERT REC'D: Yes  
QUANTITY RECEIVED: 724  
QUANTITY INSPECTED: 724  
QUANTITY REJECTED: 0

THICKNESS ORDERED: .750"  
THICKNESS RECEIVED: .750"  
SHEET SIZE ORDERED: —  
SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> N	<u>ASTM A582</u>
CORRECT THICKNESS	<input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> N	<u>47:55049</u>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK.					
RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRB	HRB	DUR A	DUR D	WEBSTER

*Testers located in the Quality Office*

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>AT</u> <small>DAS 9 9-85</small> DATE: <u>19/06/21</u>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

PURCHASE MATERIAL: AISI 303 SS ROUND BAR  
(NOTE: AIST 304/316 NOT ACCEPTABLE)



SPECIFICATION: ASTM A592

PART NUMBER: M303R[D.DDD]  
DIA.

WHERE "D.DDD" = DIAMETER IN INCHES

EG. 0.75" ROUND BAR = M303R0.750

RELEASED  
2010-02-02  
MD

B	REFORMAT DWG. ADD SPECS (ZN D8-1). REF PAR 06-020A	CP	10.01.05
A	NEW ISSUE	DS	01.12.20
REV.	DESCRIPTION	BY	DATE
DESIGN		<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA DRAWING NO. <b>M303R</b> TITLE <b>303 ROUND BAR</b> REV. B SHEET 1 OF 1 SCALE NTS COPYRIGHT © 2001 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS THE PROPERTY OF DART AEROSPACE LTD. IT IS TO BE USED FOR THE PURPOSES SPECIFIED ONLY. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT PERMISSION IN WRITING FROM DART AEROSPACE LTD.</small>	
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	10.01.05		